

Team Guidelines and Rules v0.8.2

#### The game

The goal is to battle the other teams as four teams compete in each game, and earn points while doing it. Each team is allowed as many drones as they like, but they should bring at least one Fighter drone, and one Queen drone. Teams are provided with **only one FPV race band frequency**, and are not allowed to change this frequency or jam other teams. The main idea is simple: bring down the rival Queens with your Fighters. How? That's up to you!

There are however some complications, as can be seen in the map below.



The Fighters start in the Battle-1st Arena, while the Queens are peacefully hovering in the 4-Queens Palace. Queens are not allowed to leave their corner of the Palace, Fighters have to come a treacherous way to get to the Queens. The Battle-1st Arena and the 4-Queen Palace are separated by a tunnel: the 3D Hallway. Why 3D...? Well, because its full name, The Hallway of Doom Death and Destruction, sounds rather horrendous...

As you might have guessed by now, the competition takes place indoor.

#### Law Enforcement

Law Enforcement is tough, fair, and all that... but lately they have had some issues with all these rogue drones that keep popping up in the media. Some are mere toys that fell in inexperienced hands, some fell in way worse hands...

To practise their equipment, and their resolve for that matter, Law Enforcement has placed all kinds of nasty tricks in the 3D Hallway. Not all is known at the moment, but teams may expect there will be an automatic anti-drone net cannon, a smoke cannon, and a video jamming device.

Law Enforcement also acts as the Judge and Jury. Points can that are earned are assigned by the Jury.

# Challenges

Luckily, there are some ways to evade the dangers in the 3D-Hallway. Teams will be provided with a select set of Challenges, that will be enabled one by one. The team that scores best in a challenge will be rewarded with down time of an anti-drone system in the 3D-Hallway when their team enters the 3D-Hallway. It goes without saying that opportunistic teams may attempt to fight you even during these challenges, or make use of your awarded system down time while you are in the 3D-Hallway.

Teams are free to ignore the Challenges and try their luck in the 3D-Hallway immediately, but for those estimate their chances lower than utter success the challenges can be very interesting.

# Safety

Generally, the amount of restrictions are minimized. However, in the end we need to account for safety of the audience and participants. The audience is protected by nets and polycarbonate glass around the fighting pits, but teams will have to propose a safety analysis document on how they can guarantee limitations of the dangers. Of course, besides our competition Law Enforcement, teams also need to operate within the real Dutch laws.

### Points

In the end, it's all about points. Points can be earned during the competition by performing several types of drone battles, and of course by bringing down the Queens. This means, aggressive battle teams who did not defeat a Queen, can still win the game. Points are awarded by Law Enforcement. Earning points can be done in the following ways.

Action	Reward
Hitting a rival drone	50 points
Permanently grounding a rival drone	500 points
Catching a rival drone out of the air and holding it for at least for 3 sec	5000 points
Catching a rival drone out of the air and deliver safely in a container	50000 points
Teams Queen still flies after another Queen is disabled	500 points

### Rules

- 1. Four teams have to battle each other in the same match.
- 2. The teams are provided with one FPV frequency per team. Teams are allowed multiple drones, but they have to figure out themselves how to cope with the fact that they have only one video channel available (e.g. autonomous drones, backup drones on the ground that are not transmitting yet,...).
- 3. The FPV video streams will be shown on the big screens so spectators are able to see what the pilot sees.
- 4. At the start of the competition teams will have to place all their drones in the respective team areas of the arenas. Once a drone is unable to take off without physical human interaction that drone is out of the game.
- 5. Between rounds drones can be repaired and adapted to perform optimal for the upcoming round, but the same drones are to be used for each round.
- 6. Teams are awarded points by the judges in Law Enforcement.
- 7. Teams must bring
  - a. 1 Queen drone
  - b. at least 1 Fighter drone.
  - c. optional: Defender drones
- 8. The Queen drone must fly at all times, but she is not allowed to leave her designated area in the 4-Queens Palace.
- 9. If the Queen drone is down (landed, crashed, intentionally or not), a team cannot earn additional points.
- 10. Defender drones are also not allowed outside of the teams designated Queen area, but they are allowed to temporarily land.
- 11. All drones must be flying when attacking. No ground based weapons are allowed.
- 12. Outside of the following limitations, teams are left free to design weapons as they see fit:
  - a. Teams may not use electromagnetic interference or jamming to interfere with other teams.
  - b. Teams are not allowed to demolish (parts of) the arena.
  - c. Teams must proof in a safety analysis their weapons cannot harm spectators or participants

## How to participate?

Read everything above and still enthusiastic!? Good, these are the steps required to join the competition.

- 1. Subscribe your team on droneclash.nl, **before 15 September.** The costs are **€150** per team. This is does not cover all our costs, but we do ask this small amount to make sure the teams are serious about subscribing.
- 2. We will contact you by email, planning a short team interview by Skype.
- 3. Deliverable 1 is due on September 30. It should describe the general approach your team wishes to take, and a detailed safety analysis and requirements document.
- 4. Deliverable 2 is due on October 30. We require a video demo of the general approach, and a well oiled team.

Deliverables 1 and 2 are each rewarded with points by Law Enforcement, up to a max of 1000 points per deliverable.

### Final remark

This document is not final. Small iterations of improvements will be made during as information becomes available. Pointing out loopholes to the organisation on this document, or any future changes, is much obliged.

#### Change log

v0.8 First public releasev0.8.1 Changed logov0.8.2 Updated deadline dates